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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/553,615

10/18/2005

Michael Dettmers

SHEE 200058

1978

27885

7590

03/05/2009

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EXAMINER

PRICE, CRAIG JAMES

ART UNIT

PAPER NUMBER

3753

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/553,615 | <b>Applicant(s)</b><br>DETTMERS, MICHAEL |  |
|                              | <b>Examiner</b><br>Craig Price       | <b>Art Unit</b><br>3753                  |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 November 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7-16 and 18-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-16 and 18-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/92008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Drawings*

1. Applicant's amendment overcomes the drawing objections.

### ***Claim Rejections - 35 USC § 112***

2. The 35 USC claim rejections for the prior action are withdrawn.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5,7-16 and 18-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 22, lines 22 and 23, recites the limitation "second positions" Claim 22 recites the limitation "second positions" in lines 22 and 23. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 8-16,18,19 and 21-25 are rejected, as best understood, under 35 U.S.C. 103(a) as being unpatentable over Kobow et al. (DE19708741A1) in view of Frantz (2,705,020).

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Regarding claims 1 and 22, Kobow et al. disclose a hydraulically switchable distribution valve in particular for shield supports in underground mining, with, a high pressure port (P), a load port (A), a return port (T), and a control pressure port (St,26) for hydraulic fluid. A valve piston (9), axially displaceable in a location hole of a valve seat mounting, which at its open end face is connected to the load port, which comprises a radial aperture (23) and which when in contact with a sealing seat (12) on the valve seat mounting side blocks off the load port from the high pressure port. A control piston (16) in a control piston guide, which can be displaced by means of a force exerted by a control pressure at the control pressure port, by means of which the return port, as a function of the position of the control piston, can be connected with the load port or can be blocked off from the load port and the high pressure port, and that the first radial aperture can be closed by the control piston with the arrival of the control piston at an intermediate position between an initial position and an end position, and wherein throttling clearance, if the control piston is positioned in the intermediate position, with contact between the valve piston with the sealing seat, forms a restricted fluid connection between the load port and the return port, and with an opened sealing seat forms a restricted fluid connection between the high pressure port and the return port. The load port in the initial position of the control piston is connected with the return port via the first radial aperture, and in that the control piston in its end position closes off the return port, and wherein the control piston is free to move (in as much as applicant's device is "free to move") relative to the valve piston from "its" initial position up to "its" intermediate position (a position where the hole 23 is overlapped by the

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control piston 16), and travels from the intermediate position to the end position coupled with the valve piston (the parts are coupled together by the seal between them), as shown in the figure.

Kobow et al. is silent to having a second radial aperture, wherein the valve piston comprises a second radial aperture, displaced towards the end face relative to the first radial aperture, and where the second radial aperture completely unblocks the fluid connection between the high pressure port and the load port and the cone face ring being located on the high pressure side of the second radial aperture and the second radial aperture are configured as a radial hole and the radial apertures consist of a number of radial holes, preferably four, located around the circumference and spaced apart from each other and wherein the second radial aperture, as a function of the location of the valve piston, lies opposite to the valve piston sliding guide or lies on the high pressure side of the valve piston sliding guide and the high pressure port in fluid communication with the load port through the second radial aperture when the valve piston is in a second position.

Frantz discloses a hydraulically actuated control valve which teaches the use of a second aperture (16) in the valve piston.

It would have been obvious to one of ordinary skill in the art at the time of invention to employ second radial apertures as taught by Frantz into the valve of Kobow et al. to have the valve piston comprising a second radial aperture, displaced towards the end face relative to the first radial aperture, and where the second radial aperture completely unblocks the fluid connection between the high pressure port and the load

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port and the cone face ring being located on the high pressure side of the second radial aperture and the second radial aperture are configured as a radial hole and the radial apertures consist of a number of radial holes, preferably four, located around the circumference and spaced apart from each other, and wherein the second radial aperture, as a function of the location of the valve piston, lies opposite to the valve piston sliding guide or lies on the high pressure side of the valve piston sliding guide and the high pressure port in fluid communication with the load port through the second radial aperture when the valve piston is in a second position, in order to provide a conduit between the outlet line and the upper chamber through which any air in the outlet line is bled quickly (Col.3, Lns. 24-30).

Regarding claim 2, Kobow et al. disclose that the valve piston is guided in a valve piston sliding guide (13) with the formation of a throttling clearance (between the inside diameter of 13 and the outside diameter of the holes (23)).

Regarding claim 8, Kobow et al. disclose the valve piston is fitted with a valve cone (10) and that a sealing ring with a cone surface provided for the sealing seat is located on the valve seat mounting.

Regarding claim 9, Kobow et al. disclose the sealing ring (13) is fixed in the valve seat mounting by means of a retention ring (11) and wherein the retention ring with its interior wall surface forms the valve piston sliding guide.

Regarding claims 10 and 11, Kobow et al. disclose the valve piston on its outer wall surface comprises a cone face ring, on the bottom surface of which is provided the valve cone, the cone face ring being located on the high pressure side.

Regarding claim 12, Kobow et al. disclose the control piston comprises a control piston shaft (27) that in the intermediate and end positions of the control piston overlaps the first radial aperture so as to sealedly overlap it or overlap the latter while leaving a throttle clearance.

Regarding claim 13, Kobow et al. disclose a sealing seat element (18) is located in the valve seat mounting on which, in the end position of the control piston, a forward end of the control piston shaft comes into sealing contact.

Regarding claim 14, Kobow et al. disclose the retention ring and the sealing seat element are formed in one piece and/or that the valve seat mounting comprises a stepped location section in which the sealing ring and the retention ring are clamped in a form fit manner, as shown in the figure.

Regarding claim 15, Kobow et al. disclose the retention ring surrounds the sealing ring on the side facing away from the piston sealing face with an inward chamfered ring mounting in a form fit manner as shown in the figure.

Regarding claim 18, Kobow et al. disclose a closing spring (28) is located in the valve seat mounting acts together with the valve piston such that the valve cone is clamped against the sealing ring.

Regarding claim 19, Kobow et al. disclose the first radial aperture is configured as a radial hole and the radial apertures consist of a number of radial holes, preferably four, located around the circumference and spaced apart from each other.

Regarding claim 21, Kobow et al. disclose the valve piston comprises on its

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closed face opposite to the open end face a connecting thread (the internal thread shown in schematic form near lead line 16) for connection of a disassembly tool.

Regarding claim 24, Kobow et al. disclose the load port is in limited fluid communication with the return port through a restricted fluid connection when the control piston is in the intermediate position. As piston 16 moves towards the aperture, the pathway is restricted.

Regarding claim 25, Kobow et al. disclose that the restricted fluid connection is formed by a "narrow" clearance between the sidewall of the valve piston and a valve piston sliding guide (13).

Regarding claim 16, It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a material made of plastic, since it has been held to be within the general skill of a worker to select a known material on the basis of its suitability for the intended use as a matter of design choice.

7. Claims 7 and 20 are rejected, as best understood, under 35 U.S.C. 103(a) as being unpatentable over Kobow et al. (DE19708741A1) and Frantz (2,705,020) and further in view of Dettmers (DE 10047073 C1).

Kobow et al. and Frantz are silent in having the control piston at its end face facing the control pressure port comprises an inward-facing flange, which in the intermediate position of the control piston comes into contact with a shoulder section of the valve piston, and that the valve piston is axially secured in the valve seat mounting with a snap ring.



Dettmers discloses a similar valve type which teaches the flange (below leader line 32) and the snap ring (45).

It would have been obvious to one of ordinary skill in the art at time of invention to employ a flange as taught by Dettmers into the valve of Kobow et al. and Frantz in order to create an abutment surface to the piston to ensure movement of the piston during the control pressure cycle.

It would have been obvious to one of ordinary skill in the art at the time of invention to employ a snap ring as taught by Dettmers into the valve of Kobow et al. and Frantz in order to extract the valve as a unit when disassembling.

### ***Response to Arguments***

8. Applicant's arguments filed 11/14/2008 have been fully considered but they are not persuasive.

Applicant's argument regarding the limitations which calls for "a control piston to be free to move relative to a valve piston from its initial position up to its intermediate position and travels from the intermediate position to the end position coupled with the valve piston is not persuasive, as the Kobow reference shows that the control piston 16 moves from the initial position to a position where the holes 23 are covered or overlapped, this being the intermediate position, the piston then continues to move to the end position when stopping at the interface with 13.

Regarding applicant's argument concerning the limitation that the first radial aperture is to be closed by the control piston with the arrival of the control piston at an intermediate position between an initial position and an end position is also not

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disclosed by the references is not persuasive, because when the piston of Kobow moves forward to cover the opening 23, this is an intermediate position which is between an initial and an end position, therefor the opening of Kobow is "closed" in as much as applicant's device.

Regarding applicant's argument that there is no disclosure in either reference where a second radial aperture is displaced towards the end face relative to the first radial aperture is not persuasive as clearly the Frantz reference discloses a second radial aperture 16 which can be considered to be positioned in much as the same manner as applicant's device.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Price whose telephone number is (571)272-2712.

The examiner can normally be reached on 7AM - 5:30PM Mon-Thurs, Increased flex time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Huson can be reached on (571) 272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CP  
/C. P./  
Examiner, Art Unit 3753

27 February 2009

/John Rivell/  
Primary Examiner, Art Unit 3753